l	AMENDMENTS TO THE CLAIMS
2	This listing of claims will replace all prior versions and listing of the claims in the application.
3	
4	1. (Currently Amended) A method of fabrication of etching a low -k dielectric layer used in
5	microelectronics fabrication; comprising the steps of:
6	a) forming an organic low k dielectric layer over a substrate;
7	b) forming a masking pattern over said organic low k dielectric layer; said
σ^8	masking pattern having an opening;
90	c) using an etch process to etch said organic low k dielectric layer through said
10	opening to form a first opening using said resist pattern as an etch mask; said etch
11	process comprising:
12	(1) in a first step, etching said organic low k dielectric layer by applying a plasma
13	power and flowing gasses consisting of [at least] NH ₃ gas, and [flowing]
14	CO or O ₂ [gasses] gas.
15	Previously canceled claim 2
16	
17	Previously Canceled claim 3
8	4. (Previously Amended) The method of claim 1 wherein said first step comprises
19	applying a plasma power plasma density between 1E9 and 1E11 cm ⁻³ and
20	flowing NH ₃ gas, a power in between 500 and 1500 W, and a NH ₃ flow between 50 and 300
21	sccm and a pressure between 80 and 800 mTorr and flowing CO or O2 gasses.
22	5. (original) The method of claim 1 wherein said organic low k dielectric is comprised of a
23	material selected from the group consisting of fluorinated arylether, Benzocyclobuthene
24	(BCB), amorphous teflon, carbon doped oxides, poly arylene ether (PAE) and organic Spin on
25	materials.
26	6. (original) The method of claim 1 wherein said organic low k dielectric is comprised of a
27	material selected from the group consisting of fluorinated arylether, and poly arylene ether.
28	7. (original) The method of claim 1 wherein said organic low k dielectric is comprised of carbon
9	doned oxide

. I	8. (original) The method of claim I wherein said organic low k dielectric is comprised of poly
2	arylene ether (PAE).
3	9. (Previously Amended) The method of claim 1 wherein said etch forms [a] said first opening
4	through said organic low k dielectric layer; said first opening having sidewalls defined by said
5	organic low k dielectric layer; said sidewalls are substantially vertical at a angle between 87
6	and 93 degrees to the surface of the substrate; and said first step comprises applying a
7	plasma power plasma density between 1E9 and 1E11 cm ⁻³ and flowing NH ₃ gas, a power in
8	between 500 and 1500 W, and a NH3 flow between 50 and 300 sccm and a pressure between
9	80 and 800 mTorr and flowing CO or O ₂ gasses.
10	
11	10. (original) The method of Claim 1 wherein the substrate is selected from the group consisting
12	of: microelectronics conductor materials; microelectronics semiconductor materials; and
13	microelectronics dielectric materials.
124	
13/	/11. (Previously AMENDED) A method of fabrication of etching a low -k dielectric layer,
16	comprising the steps of:
- 17	a) forming an organic low k dielectric layer over an insulation layer over a
18	substrate;
19	b) forming a masking pattern over said organic low k dielectric layer; said
20	masking pattern having an opening;
21	c) using an etch process to etch said organic low k dielectric layer through said
22	opening to form a first opening using said masking pattern as an etch mask; said etch
23	process comprising:
24	(1) in a first step, etching said organic low k dielectric layer by applying a plasma
25	power and flowing NH ₃ and H ₂ etch gasses and flowing O ₂ or CO gasses.
	power and nowing 14113 and 112 etch gasses and nowing O2 of CO gasses.
26	
27	Previously canceled claim 12
28	10 (D.) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
29	13. (Previously Amended) The method of claim 11 wherein said first step comprises:

. 1	a plasma power between 500 and 1500 W, [medium] plasma power plasma
2	density between 1E9 and 1E11 cm ⁻³ , a NH ₃ flow between 50 and 300 sccm, a H ₂ flow between
3	50 and 300 sccm and a pressure between 80 and 800 mTorr and flowing O2 or CO gasses.
4	
5	14. (Previously Amended) The method of claim 11 wherein said organic low k dielectric is
6	comprised of a material selected from the group consisting of fluorinated arylether,
7	Benzocyclobuthene (BCB), amorphous teflon, carbon doped oxides, poly arylene ether (PAE)
8	and organic Spin on materials.
9	15. (original) The method of claim 11 wherein said organic low k dielectric is comprised of a
10	material selected from the group consisting of fluorinated arylether, and poly arylene ether.
11	16. (original) The method of claim 11 wherein said organic low k dielectric is comprised of
12	carbon doped oxide.
13	17. (original) The method of claim 11 wherein said organic low k dielectric is comprised of
14	poly arylene ether (PAE).
13/	18. (Previously Amended) The method of claim 11 wherein said etch forms said first opening
16	through said organic low k dielectric layer; said first opening having sidewalls defined by said
17/	organic low k dielectric layer; said sidewalls are substantially vertical at a angle between 87
18 \bigcirc	and 93 degrees to the surface of the substrate; and said first step comprises:
19	a plasma power between 500 and 1500 W, plasma power plasma density
20	between 1E9 and 1E11 cm ⁻³ , a NH ₃ flow between 50 and 300 sccm, a H ₂ flow between 50 and
21	300 sccm and a pressure between 80 and 800 mTorr and flowing O2 or CO gasses.
22	19. (Currently and Previously Amended) A method of fabrication of etching a low -k dielectric
23	layer; comprising the steps of:
24	a) forming an organic low k dielectric layer over a insulation layer over a
25	substrate;
26	b) forming a masking pattern over said organic low k dielectric layer; said
27	masking pattern having an opening;
28	c) using an etch process to etch said organic low k dielectric layer through said
29	opening to form a first opening using said masking pattern as an etch mask; said etch
30	process does not comprise a plasma treatment; said etch process comprising:

. 1	(1) in a first step, etching said organic low k dielectric layer by applying a plasma
2	power and flowing only NH ₃ and N ₂ etch gasses.
3	
4	20. (Previously Amended) The method of claim 19 wherein said first step comprises:
5	power in between 500 and 1500 W, [medium] plasma power plasma density
6	between 1E9 and 1E11 cm ⁻³ , a NH ₃ flow between 50 and 300 sccm and a N ₂ flow between 50
7	and 300 sccm and a pressure between 80 and 800 mTorr.
8	21. (Amended) The method of claim 19 wherein said first step comprises:
9	power in between 500 and 1500 W, plasma power plasma density between
10	1E9 and 1E11 cm $^{-3}$, a NH $_3$ flow between 50 and 300 sccm and a N $_2$ flow between 50 and 300
11	sccm and a pressure between 80 and 800 mTorr and flowing CO or O2 gasses.
12	
13	22. (original) The method of claim 19 wherein said organic low k dielectric is comprised of a
14	material selected from the group consisting of fluorinated arylether, Benzocyclobuthene
B/	(BCB), amorphous teflon, carbon doped oxides, poly arylene ether (PAE) and organic Spin on
16)	materials.
(m)	23. (original) The method of claim 19 wherein said organic low k dielectric is comprised of a
18	material selected from the group consisting of fluorinated arylether, and poly arylene ether.
19	24. (original) The method of claim 19 wherein said organic low k dielectric is comprised of
20	carbon doped oxide.
21	25. (original) The method of claim 19 wherein said organic low k dielectric is comprised of
22	poly arylene ether (PAE).
23	26. (Previously Amended) The method of claim 19 wherein said etch forms said first opening
24	through said organic low k dielectric layer; said first opening having sidewalls defined by said
25	organic low k dielectric layer; said sidewalls are substantially vertical at a angle between 87
26	and 93 degrees to the surface of the substrate.
27	
28	
29	27. (currently amended and previously added) A method of fabrication of etching a low -k
30	dielectric layer; comprising the steps of:

1	a) forming an organic low k dielectric layer over a insulation layer over a
2	substrate; said organic low k dielectric is comprised of a material selected from the
3	group consisting of fluorinated arylether, Benzocyclobuthene, amorphous teflon,
4	carbon doped oxides, and organic Spin on materials.
5	b) forming a masking pattern over said organic low k dielectric layer; said
6	masking pattern having an opening;
7	c) using an etch process to etch said organic low k dielectric layer through said
8	opening to form a first opening using said masking pattern as an etch mask; said etch
9	process does not comprise a plasma treatment; said etch process comprising:
10	(1) in a first step, etching said organic low k dielectric layer by applying a plasma
11	power and flowing NH_3 and N_2 etch gasses and flowing CO or O_2 gasses.
12	
13	28. (previously added) The method of claim 27 wherein said first step comprises:
14	power in between 500 and 1500 W, plasma power plasma density between
15	1E9 and 1E11 cm ⁻³ , a NH ₃ flow between 50 and 300 sccm and a N ₂ flow between 50 and 300
16	sccm and a pressure between 80 and 800 mTorr and flowing CO or O ₂ gasses.
17	29. (previously added) The method of claim 27 wherein said first step comprises:
18	power in between 500 and 1500 W, plasma power plasma density between
19	1E9 and 1E11 cm ⁻³ , a NH ₃ flow between 50 and 300 sccm and a N ₂ flow between 50 and 300
20	sccm and a pressure between 80 and 800 mTorr and flowing CO or O ₂ gasses; and
21	said etch forms said first opening through said organic low k dielectric layer;
22	said first opening having sidewalls defined by said organic low k dielectric layer; said sidewalls
23	are substantially vertical at a angle between 87 and 93 degrees to the surface of the substrate.
24	